

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



October 26, 2015

Jimmie Cho, Senior Vice President
Gas Operations and System Integrity
Southern California Gas Company
555 West 5th Street, GT21C3
Los Angeles, CA 90013

GI-2015-08-SDG46-02A

Subject: General Order (G.O.) 112 Operation and Maintenance Inspection of San Diego Gas and Electric's South Inspection Unit Cathodic Protection Facilities

Dear Mr. Cho:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission conducted a G.O. 112¹ Operation and Maintenance Inspection of San Diego Gas and Electric's (SDG&E) Cathodic Protection (CP) Facilities in the South Distribution Inspection Unit (Inspection Unit) from August 31st through September 4th, 2015. The inspection included a review of the Inspection Unit's cathodic protection for calendar years 2013 and 2014 and a field inspection of a representative sample of pipeline facilities in the Metro, Eastern, and Beach Cities districts. SED staff also reviewed the Inspection Units Operator Qualification records, which included a field observation of randomly selected individuals performing covered tasks.

SED's findings are noted in the Summary of Inspection Findings (Summary) which is enclosed with this letter. The Summary reflects only those particular records and pipeline facilities that SED inspected during the inspection. A summary of SED recommendations to this Inspection Unit is also enclosed in the "Recommendations and Concerns Summary".

Please provide a written response within 30 days of receipt of this letter indicating any updates or corrective actions taken by SDG&E. Pursuant to Commission Resolution ALJ-274, SED staff has the authority to issue citations for each violation found during the inspection.

If you have any questions, please contact Alula Gebremedhin at (415) 703-1816 or by email at ag5@cpuc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Kenneth A. Bruno".

Kenneth Bruno
Program Manager
Gas Safety and Reliability Branch
Safety and Enforcement Division

CC: Alula Gebremedhin, SED/GSRB

Jeff Koskie, Sempra
Dennis Lee, SED/GSRB
Kan Wai Tong, SED/GSRB
Terence Eng, SED/GSRB

¹ General Order 112-F was adopted by the Commission on June 25, 2015 via Decision 15-06-044.

**Summary of Inspection Findings
2015 SDG&E South Distribution Inspection
August 31st through September 4th, 2015**

I. SED Identified Probable Violations

1. Title 49 CFR §192.481(a) states:

“Each operator must inspect each pipeline or portion of pipeline that is exposed to the atmosphere for evidence of atmospheric corrosion, as follows:

If the pipeline is located: Onshore

Then the frequency of inspection is: At least once every 3 calendar years, but with intervals not exceeding 39 months”

SED reviewed bridge and span inspection records and found that SDG&E did not perform atmospheric corrosion inspections of the following three above ground pipe locations listed in Table 1 below since installation. Therefore, SDG&E is in violation of 192.481(a).

Table 1: Bridge and Spans (Above Ground Pipe) Missed Inspections

Functional Location	ID Number	Location	City	Installation Year
GD.SDG.EST.BS.64	64	12403 WILLOW RD	LAKESIDE	1991
GD.SDG.EST.BS.65	65	WILLOW RD @ VIEJAS GRADE RD	ALPINE	2001
GD.SDG.CMT.BS.68	68	ORANGE AVE @ 54TH ST	SAN DIEGO	1957

2. Title 49 CFR §192.465(d) states in part:

“Each operator shall take prompt remedial action to correct any deficiencies indicated by the [external corrosion control] monitoring.”

PHMSA interpretation #PI-89-006 dated May 19, 1989 states that cathodic protection deficiencies are expected to be addressed and corrected by the next monitoring cycle (once each calendar year, but with intervals not exceeding 15 months) under normal conditions.

SED reviewed records of short sections of pipe, separately protected and monitored on a 10-year cycle (10%ers), that did not meet the -850 mV protection criteria during their 2014 calendar year inspections. SED found that SDG&E took more than a year to remediate three 10%ers locations listed in Table 2 below. SED believes the corrective actions were unreasonably delayed as SDG&E did not start the troubleshooting

process until 15 months from the discovery dates. Therefore, SDG&E is in violation of 192.465(d) for failing to take prompt remedial action to correct the deficiencies.

Table 2: Late CP Deficiencies Remediation

District	Location	04/22/2014 PTS Read (V)	07/17/2015 PTS Read (V)	09/01/2015 PTS Read (V) and Comments
Metro	268 SURREY DR BONITA	-0.830	-0.720	-1
Metro	272 SURREY DR BONITA	-0.630	-0.645	-1.113
Metro	291 SURREY PL BONITA	-0.821	-0.428	Pending to install anode (concrete surface)

II. Recommendations and Concerns Summary

1. During SED’s field visit, SDG&E recorded DC voltage outputs exceeding the DC voltage ratings of the following rectifiers listed in Table 3 below.

Universal CP rectifiers’ manual states in part:

“Do not exceed AC or DC ratings of the rectifiers. Operating the rectifier at higher than the nameplate rating will result in eventual failure of the rectifier.”

Table 3: Rectifier DC Volts readings and ratings

District	CP Area	Point	Equipment No	DC Volts rating (V)	DC Volts recorded (V)	Upper Limit on Inspection Record (V)
Eastern	Sta-196	R 1	600412395	20	27	50
Eastern	Sta-353	R 1	600621744	20	25	50

On a side note, SDG&E’s inspection records show an “upper limit” value of 50V for all rectifiers while the DC voltage output ratings are, in majority, less than 50V.

Please provide an update on corrective measures to address this concern. In addition, SED suggests correcting the “upper limit” values of all rectifiers to reflect the actual rating values of the equipment as provided by the manufacturer.

2. During SED’s field visit, SED observed the following indications at the span locations listed below.
 - a. Bridge and Span 21: Wrap damage, pipe bend suspended off of bridge may need support, missing (not visible) pipe line marker
 - b. Bridge and Span 48: Missing (not visible) line marker, seaweed on the pipeline

Please provide an update on the corrective measures taken to address these indications.

3. During the CP monitoring records review, SED found 65 CP areas where the CP protection was deficient in both 2013 and 2014. SED requested the SDG&E troubleshooting records of these areas and found that the pipe to soil reads fluctuated between inspection cycles; in a majority of the cases, “shorted pipe” was documented as the reason for the deficiency. SDG&E explained that about 46,000 homes in the city of San Diego alone are changing their home electric sources to solar systems and using the gas meter riser for electrical grounding which may cause SDG&E’s system to have inadequate CP protection. SDG&E also explained that the city inspectors advised homeowners to ground their solar electric system to the gas line.

Considering SDG&E also provides electric distribution service to the city, we believe SDG&E can get more data on the extent of these switchovers and the associated cathodic protection concerns. As required by Part 192.616, Public Awareness, SED suggests that SDG&E contact the city officials to discuss the potential impacts of the external power sources grounding to SDG&E’s gas facilities.

Please provide documentation on SDG&E’s effort to communicate the issue with city officials, homeowners, or any parties involved with this concern.

Please also provide updates on SDG&E’s plan to prevent the reoccurrence of this concern.

4. During field visits to CP monitoring locations, SED observed numerous locations, listed in Table 4 below, continuing to have deficient levels of cathodic protection since the prior read date, or currently having deficient levels of cathodic protection since the prior adequate read. Please provide SED with an update on the remediation of each deficient read location listed in Table 4.

Table 4: SED Field Visit - Deficient Read Locations

District	CP Area	Point	Location	Lower Limit (Volts)	Last Read (Volts)	Field Visit Read (Volts)
Eastern	112.2	4	959 Wilson Ave N/O Eucalyptus El Cajon	-0.850	-0.82	-0.816
Eastern	292	4	6443 Dwane Ave W/O Madra Ave San Diego	-0.850	-0.815	-0.734
Eastern	308	4	3038 Crane St w/o Golden Ave Lemon Grove	-0.520	-0.42	-0.516
Eastern	353	11	1338 Clove St N/O Pepper Dr El Cajon	-0.520	-0.4	-0.373
Eastern	76.3	8	4701 Valencia N/O Solita San Diego	-0.850	-0.73	-0.767
Eastern	196	3	8310 Sunview S/O Sunglow El Cajon	-0.440	-0.3	-0.373
Eastern	196	4	12770 Jackson Hill Rd W/O Jackson Hill D El Cajon	-0.510	-0.38	-0.426
Eastern	79.1	10	5111 Tipton, north end of street San Diego	-0.850	-0.79	-0.671
Eastern	79.1	11	5442 Brookbank Pl N/O Falls Way San Diego	-0.850	-0.7	-0.728
Beach Cities	111.2	7	1815 Cross St N/O Gardenia San Diego	-0.510	-0.484	-0.467
Beach Cities	129	2	Harbor Police Sta on Shelter Island San Diego	-0.500	-0.196	-0.411
Beach Cities	129	3	3218 Macaulay N/O rectifier San Diego	-0.850	-0.34	-0.845
Beach Cities	291	6	3973 Mission Blvd S/O Zanzibar Ct San Diego	-0.850	-0.67	-0.642
Beach Cities	291	7	875 Garnet W/O Bayard San Diego	-0.850	-0.67	-0.835
Beach cities	377	33	6086 Via Regla San Diego	-0.850	-0.706	-0.678
Metro	215	8	901 "C" meter on 9th E/O "C" Ave Coronado	-0.850	-0.615	-0.675

Metro	215	9	1634 6th St W/O Glorietta Blvd Coronado	-0.850	-0.745	-0.817
Metro	294	15	3606 State St S/O Chalmers San Diego	-0.850	-0.875	-0.791
Metro	294	17	1714 Washington Pl E/O Portola Pl San Diego	-0.850	-0.82	-0.788
Metro	40.2	6	4135 Wilson Ave s/o Orange San Diego	-0.850	-0.79	-0.770
Metro	46.3	2	5417 Redwood E/O 54th St. San Diego	-0.500	-0.48	-0.436
Metro	46.3	4	5547 Redwood E/O W. Virgo San Diego	-0.500	-0.43	-0.470
Metro	53.4	12	3367 Copley W/O 34th St San Diego	-0.850	-0.8	-0.692
Metro	75.3	3	3725 Altadena S/O Wightman St San Diego	-0.850	-0.8	-0.801
Metro	75.3	5	4975 Trojan A/W/O 50th St. San Diego	-0.850	-0.8	-0.842
Eastern	CP10		4043 Georgia St., San Diego	-0.850	-0.855	-0.690
Metro	CP10		6255 Mchaney Ct., San Diego	-0.850	-0.852	-0.776